NOVEMBER/DECEMBER 2025

FEIM64C/CEIM64C — OPERATING SYSTEMS

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define an operating system.
2. List any two functions of an operating system.
3. Define process.
4. What is the use of Process Control Block (PCB).
5. What is paging in memory management?
6. Why we need memory partition?
7. What is a directory?
8. List the different file types.
9. Mention two differences between shell and kernel.
10. Expand the following UNIX commands : ls, cp.

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SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the functions of an operating system.

Or

(b) Write short notes on the history of operating systems.

12. (a) Discuss briefly about the process state transition with a neat diagram.

Or

(b) Describe Inter-process Communication (IPC) mechanisms.

13. (a) Explain demand paging with an example.

Or

(b) Discuss the concept of virtual memory.

14. (a) Explain directory structures in file systems.

Or

(b) Discuss disk scheduling algorithms.

15. (a) Write short notes on UNIX shell and kernel.

Or

(b) Explain the use of the following UNIX commands with examples: mkdir, cd, rmdir.

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SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Analyze the various types of operating systems with suitable examples.

17. Explain in detail the concept of deadlocks and discuss the necessary conditions for its occurrence.

18. Evaluate different page replacement algorithms with examples and state which one is most efficient.

19. Explain the various file allocation methods available in OS.

20. Discuss in detail the structure of UNIX operating system and evaluate its strengths and weakness.

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